

## **REMARKS**

Before entry of this Response, claims 1-16 were pending in the application. After entry of this Response, claims 1-16 remain pending under examination. Claims 4 and 7 have been previously withdrawn. The number of total claims has not been increased, and the number of independent claims has not been increased beyond the number for which payment previously had been made.

Applicant has carefully considered the Examiner's Action of November 16, 2005, and the references cited therein. The following is a brief summary of the Action. Applicants' election without traverse of Species 1 in the reply filed on October 31, 2005, was acknowledged. Claims 4 and 7 were withdrawn from consideration. Claims 1-3, 5, 6, and 8-16 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Zhao et al (U.S.P. 6,514,602) in view of Grenier (U.S.P. 5,613,964).

Applicants respectfully traverse the rejection of claims 1-3, 5, 6, and 8-16 under 35 U.S.C. § 103(a) over Zhao et al in view of Grenier for the reasons explained below.

Each of claims 1, 12 and 14 requires the water vapor transmission rate (WVTR) of the backsheet to be at least about 20% of the WVTR of the cover sheet. Claim 1 requires the cover sheet and the back sheet to have a contact angle mismatch of less than about 25%. The Office Action contends that Zhao discloses both of these features. However, Applicants believe that Zhao et al fails to disclose either of these aspects of the claimed invention.

Applicants believe that Zhao et al fails to disclose any WVTR data for any of the materials that Zhao et al identifies (col. 11, lines 49-68) as being suitable for topsheets. As explained more fully below, Applicants believe that Zhao et al only discloses WVTR

data (col. 7, ll. 39-42) for films of the Zhao et al invention made into back sheets (38), that Zhao et al only discloses using apertured films of the Zhao et al invention for cover sheets (a.k.a. topsheets) (42), and that Zhao et al does not disclose any WVTR data for such apertured films that Zhao et al instructs to be used for cover sheets (42). In the absence of such WVTR data for apertured Zhao et al films used for cover sheets (42), Zhao et al is incapable of disclosing the above-noted WVTR ratio feature of Applicants' claims 1, 12 and 14. Similarly, since the contact angle of a material cannot be said to be the same as or less than 25% of, the contact angle of the same material once that material has been apertured, Zhao et al cannot be said to disclose that the cover sheet and the back sheet have a contact angle mismatch of less than about 25% as required by claim 1.

In addressing the above-noted WVTR relative percentage feature of Applicants' claims 1, 12 and 14, lines 11-21 on page 3 of the Office Action state (emphasis added):

With regard to claim 1, Zhao discloses an interlabial absorbent article (20) \* \* \* \* comprising: a generally liquid permeable cover sheet (42); a generally liquid impermeable back sheet (38); an absorbent material (44) disposed between the cover sheet (42) and the back sheet (38); wherein the back sheet (38) has a water vapor transmission rate that is at least about 20% of a water vapor transmission rate of the cover sheet (col. 7, ll. 39-42 and col. 23, ll. 37-38).

Page 4, lines 10-17 of the Office Action further addresses the relative water vapor transmission rate limitation of claims 1, 12 and 14 as follows (emphasis added):

Zhao discloses the coversheet can be the reverse order laminate such that the breathable biodegradable layer is at the body side (c. 12, ll. 24-30), adjacent the soluble layer with the permeable layer contacting the core. Zhao discloses the water vapor transmission rate, i.e., breathability, for the backsheet and the coversheet can be

substantially the same (col. 18, ll. 43-56; Table 5, col. 21, ll. 52-54; Tables 7 and 9, col. 23, ll. 36-38) while varying the thickness of the water-soluble layer and the percent polymer to obtain desired water-permeability, i.e., flushability, characteristics; thus Zhao discloses the article having the claimed backsheet and coversheet vapor transmission rate percents.

As explained below, applicants disagree with the conclusion that Zhao discloses the water vapor transmission rate, i.e., breathability, for the backsheet and the coversheet can be substantially the same.

Because the backsheet and the coversheet perform very different functions where liquids are concerned, one should not expect them to be structured the same.

Indeed, Zhao et al column 11, lines 25-30, states (emphasis added):

These absorbent articles typically comprise a substantially **water-impervious backsheet made from the film of the present invention**, a substantially **water-permeable topsheet** joined to, or otherwise associated with the backsheet, and an absorbent core positioned between the backsheet and the topsheet.

Thus, because the topsheet is water permeable and the backsheet is liquid impervious, the topsheet cannot be formed of the same film as forms the backsheet. A water permeable structure like the topsheet is going to have a very different water vapor transmission rate than the WVTR of a liquid impervious structure such as a backsheet. The Office Action's contention that "Zhao discloses the water vapor transmission rate, i.e., breathability, for the backsheet and the coversheet can be substantially the same" ignores the very different structural requirements of the backsheet and the coversheet.

Moreover, the WVTR data disclosed in Zhao et al pertain only to the inventive films that are for backsheets. The title of the Zhao et al patent is (emphasis added):  
Water-Flushable And Biodegradable **Film Useful As Backsheets** For Disposable

Absorbent Articles. Moreover, Zhao et al column 3, lines 34-36 states that (emphasis added):

**The films of the present invention** are particularly useful as **backsheets** for disposable absorbent articles, and in particular for flushable interlabial pads.

It is in this context that Zhao et al column 7, lines 39-42 states (emphasis added):

Preferred **films of the present invention** are also breathable and have relatively high moisture vapor transmission rates (MVTR), typically at least about 500 g/m<sup>2</sup>/24 hours, preferably at least about 1000 g/m<sup>2</sup>/24 hours, as measured according the test method described in Section G(2) below.

Thus, this disclosure at Zhao et al col. 7, ll. 39-42 teaches no more than that the back sheets disclosed in Zhao et al have relatively high moisture vapor transmission rates (MVTR) that typically range between at least about 500 g/m<sup>2</sup>/24 hours to at least about 1000 g/m<sup>2</sup>/24 hours.

As to these very same films that Zhao et al regards as its invention and that have WVTRs of at least about 500 g/m<sup>2</sup>/24 hours, Zhao et al discloses that only after being apertured can such Zhao et al inventive films be used as coversheets (a.k.a. topsheets) in disposable absorbent products such as absorbent interlabial pads. Thus, applicants believe that Zhao et al teaches that one takes one of Zhao et al's inventive 500 g/m<sup>2</sup>/24 hours WVTR films and apertures it if one wants to have a film that can be used as a topsheet. It seems a reasonable assumption that doing so could increase the WVTR by more than five times.

This conclusion is drawn from the following Zhao et al passages. Lines 38-49 of Zhao et al column 12 explain that when using the film of the present invention for a

topsheet, then the film of the present invention must be prepared as an **apertured formed** film (emphasis added):

**In an alternative embodiment according to the present invention, the film the present invention can be used to provide a topsheet for such an absorbent article. In this alternative embodiment, the biodegradable layer of the film is adjacent the wearer's body or skin, while the water-permeable layer of the film is adjacent the absorbent core. Nominally, the biodegradable layer of the film is water-impervious such that the film is also water-impervious. However, this biodegradable layer, as well as the film, can be made water-permeable by preparing the film of the present invention as an apertured formed film, as previously described for other apertured formed film topsheets.**

Lines 57-63 of Zhao et al column 14 again explain that the topsheet 42 must comprise an **apertured formed film** (emphasis added):

**The topsheet 42 can also comprise an apertured formed film** as previously described, preferably a "DRI-WEAVE" topsheet. Alternatively, **an apertured formed film prepared according to the present invention** with the biodegradable layer adjacent the body of the wearer and the water-permeable layer adjacent the absorbent core can be used.

Zhao et al, **column 21, lines 52-54** merely states (emphasis added):

Films prepared according to Examples 1 to 6 can be used as backsheets for disposable products such as absorbent inter-labial pads **or as apertured formed** films (sic) for such products.

Thus, Zhao et al teaches that films prepared according to Examples 1 to 6 are used for backsheets for disposable absorbent products such as absorbent interlabial pads or may be used for topsheets for these products upon being apertured. This clarification, namely, that it is only apertured films of Zhao et al's invention that are used for topsheets, is reinforced everywhere else in Zhao et al where the topsheets are

described in this regard. For example, at column 11, lines 45-67, Zhao et al discloses that the topsheet can be manufactured from a wide range of materials that include **apertured plastic films**, and Zhao et al column 11, lines 58-61 states that a preferred topsheet for use in the invention of Zhao et al is "selected from high loft nonwoven topsheets and **aperture formed film** topsheets." Similarly, lines 1-2 of Zhao et al column 12 state that (emphasis added):

**Apertured formed films are especially preferred  
for the topsheet \* \* \*.**

Zhao et al column 12, lines 14-15 indicates that microapertured formed film topsheets are particularly preferred.

Yet Zhao et al fails to provide any WVTR data for any of these apertured film materials or for any of the other materials said to be suitable for topsheets. Nor does Zhao et al give any indication of a concern for the WVTR of topsheets relative to backsheets, much less a requirement as in claims 1, 12 and 14 noted above.

Nor do the cited references to Zhao et al relied upon in the Office Action provide any support for the contention that "thus Zhao discloses the article having the claimed backsheet and coversheet vapor transmission rate percents." Zhao et al **column 18, lines 43-56** only explains how to conduct a moisture vapor transmission rate test. The characteristics tabulated in Zhao et al **Table 5 in column 21, ll. 52-54** fail to provide any information about the relative moisture vapor transmission rate (WVTR) of a backsheet prepared according to the films of the Zhao et al invention relative to the WVTR of a top sheet prepared as an apertured film according to the teachings of Zhao et al. Moreover, Zhao et al fails to provide any indication of how great an increase in WVTR will result when these films are apertured in order to form topsheets. Similarly,

Zhao et al col. 7, ll. 39-42 teaches no more than that the back sheets disclosed in Zhao et al have MVTR of at least about 500 g/m<sup>2</sup>/24 hours. Zhao et al column 23, lines 37-38, upon which the Office Action relies as disclosure of the relative MVTR recited in claim 1, states only that (emphasis added):

Films prepared according to **Examples 7 to 9** can be used as backsheets for disposable absorbent products such as absorbent interlabial pads or as **apertured formed** filmed (sic) **topsheets** for such products.

And this citation supports applicants' contention that only after being apertured does Zhao et al recommend using its inventive films as coversheets (a.k.a. topsheets).

As noted above, the films described in Zhao et al primarily pertain to the back sheets. Moreover, Zhao et al only discloses use of such films as topsheets when those films are apertured. When the films are apertured, there is no disclosure of what the water vapor transmission rate of the apertured films would be. Thus, there is no way to compare the water vapor transmission rate of the unapertured films (backsheets) with the apertured films (topsheets). Zhao et al fails to give any indication of a concern for the WVTR of topsheets relative to backsheets, much less any specific requirement as in claims 1, 12 and 14 noted above. Accordingly, Zhao et al fails to suggest or disclose the relative water vapor transmission rate feature of Applicants' claims 1, 12 and 14.

Applicants therefore respectfully submit that claims 1-3, 5, 6, and 8-16 are patentable under 35 U.S.C. § 103(a) over Zhao et al in view of Grenier.

Claim 1 requires the cover sheet and the back sheet to have a contact angle mismatch of less than about 25%. Because the topsheet is water permeable and the backsheet is liquid impervious, the topsheet cannot be formed of the same film as forms the backsheet. A water permeable structure like the topsheet is going to have a

very different contact angle than the contact angle of a liquid impervious structure such as a backsheet. Zhao et al fails to provide any data about the contact angle of any of the materials that Zhao et al suggests as suitable for a topsheet, whether apertured film or otherwise, and thus Zhao et al fails to provide any suggestion or disclosure of what sort of contact angle mismatch there would be.

Applicants therefore respectfully submit that claim 1 is patentable under 35 U.S.C. § 103(a) over Zhao et al in view of Grenier for this additional reason.

Claim 3 requires the cover sheet to comprise a spunlace laminate material of rayon and film. Lines 14-15 on page 6 of the Office Action make the following contention:

With regard to claim 3, Zhao discloses the cover sheet (42) comprises a spunlace laminate (col. 14, l. 53) material of rayon and film (col. 14, l. 24).

However, Zhao column 14, line 53 only states that:

a suitable topsheet 42 is a nonwoven material formed of rayon fibers with a basis weight of about 18 g/m<sup>2</sup> \* \* \* \*.

While Zhao column 10, lines 23-25 merely states that:

Suitable film-forming methods include coextrusion, lamination, coating, cast film, blown-film and like methods.

However, disclosing that the topsheet can be a nonwoven material formed of rayon fibers is not a disclosure of a spunlace laminate material of rayon and film. Similarly, disclosing that the films mentioned in Zhao can be formed by lamination, does not disclose that a top sheet can be a spunlace laminate of rayon plus a film. Zhao failed to disclose that a topsheet is anything other than a non-woven or a film, and a disclosure that such film can be formed by lamination, does not disclose a laminate that



is comprised of spunlace material plus film. Accordingly, from these Zhao citations, one does not find disclosure of a cover sheet that comprises a spunlace laminate material of rayon and film.

Applicants therefore respectfully submit that claim 3 is patentable under 35 U.S.C. § 103(a) over Zhao et al in view of Grenier for this additional reason.

Claim 6 requires the cover sheet to have a WVTR of about 40,000 mocon value and a back sheet having a WVTR of about 10,000 mocon value. Since Zhao never calculates the WVTR for a cover sheet that is formed of apertured film disclosed in Zhao, Zhao fails to disclose a cover sheet with a WVTR of about 40,000 mocon value.

Line 22 on page 5 through line 2 on page 6 of the Office Action state:

The interlabial absorbent article of Zhao comprises the same structure and materials disclosed in the instant specification as being a suitable embodiment of the present invention.

However, this statement falls short of the claim that Zhao discloses a topsheet having a WVTR of about 40,000 mocon value.


Applicants therefore respectfully submit that claim 6 is patentable under 35 U.S.C. § 103(a) over Zhao et al in view of Grenier for this additional reason.

Applicants respectfully request reconsideration and reexamination of claims 1-3, 5, 6, and 8-16, as presented herein, and submit that these claims are in condition for allowance and should be passed to issue.

If any fee or extension of time is required to obtain entry of this Amendment, the undersigned hereby petitions the Commissioner to grant any necessary time extension and authorizes charging Deposit Account No. 04-1403 for any such fee not submitted herewith.

Respectfully submitted,

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